



Docket No. 303.610US1  
WD # 388236

Micron Ref. No. 98-1297

**CLEAN VERSION OF PENDING CLAIMS**

**INSULATORS FOR HIGH DENSITY CIRCUITS**

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Serial No.: 09/382,524

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*Claims 1-11, 42, 43, and 46-57, as of November 13, 2002 (Date of Response to First Office Action after CPA).*

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1. (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and  
a plurality of conductive structures embedded in the foamed material layer.

C 3.  
2. (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and  
a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material layer has a foamed thickness of between about .4 microns and about 3.4 microns.

6.  
3. (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and  
a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material layer has a dielectric constant of between about 1.2 and about 1.8.

~~2.~~<sup>2.</sup> The conductive system of claim 1, wherein the foamed material layer is a foamed polymer layer.

~~9.~~<sup>9.</sup> (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and  
a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material layer is a foamed aerogel layer.

~~12.~~<sup>12.</sup> (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and  
a plurality of conductive structures embedded in the foamed material layer.

~~15.~~<sup>15.</sup> (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and  
a plurality of conductive structures embedded in the foamed material layer, wherein the plurality of conductive structures embedded in the foamed material layer are conductive circuit lines.

~~13.~~<sup>13.</sup> The conductive system of claim ~~8~~<sup>12</sup>, wherein the foamed material is a foamed polymer.

~~14.~~<sup>14.</sup> The conductive system of claim ~~8~~<sup>12</sup>, wherein the foamed material is a foamed polyimide.

~~18.~~  
~~10.~~ (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and  
a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material is a foamed polymer containing silane.

*C!*  
*(continued)*  
~~21.~~  
~~11.~~ (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and  
a plurality of conductive structures embedded in the foamed material layer, wherein the cell size is less than about .1 micron.

~~24.~~  
~~42.~~ (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and  
a plurality of copper structures embedded in the foamed material layer.

~~25.~~  
~~43.~~ (Amended) A conductive system comprising:  
a substrate;  
a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and  
a plurality of aluminum structures embedded in the foamed material layer.

- C1*  
*(continued)*
- ~~46.~~<sup>4</sup> (New) The conductive system of claim ~~2~~<sup>3</sup>, wherein the substrate comprises a semiconductor.
- ~~47.~~<sup>5</sup> (New) The conductive system of claim ~~2~~<sup>3</sup>, wherein the substrate comprises a doped semiconductor.
- ~~48.~~<sup>7</sup> (New) The conductive system of claim ~~3~~<sup>6</sup>, wherein the substrate comprises an undoped semiconductor.
- ~~49.~~<sup>8</sup> (New) The conductive system of claim ~~3~~<sup>6</sup>, wherein the substrate comprises an epitaxial layer supported by a semiconductor.
- ~~50.~~<sup>10</sup> (New) The conductive system of claim ~~3~~<sup>9</sup>, wherein the substrate comprises an epitaxial layer supported by an insulator.
- ~~51.~~<sup>11</sup> (New) The conductive system of claim ~~3~~<sup>9</sup>, wherein the substrate comprises silicon.
- ~~52.~~<sup>16</sup> (New) The conductive system of claim ~~7~~<sup>15</sup>, wherein the substrate comprises germanium.
- ~~53.~~<sup>17</sup> (New) The conductive system of claim ~~7~~<sup>15</sup>, wherein the substrate comprises gallium arsenide.
- ~~54.~~<sup>19</sup> (New) The conductive system of claim ~~10~~<sup>18</sup>, wherein the substrate comprises silicon-on-insulator.
- ~~55.~~<sup>20</sup> (New) The conductive system of claim ~~10~~<sup>18</sup>, wherein the substrate comprises silicon-on-sapphire.

PENDING CLAIMS

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22.

~~56.~~

(New) The conductive system of claim <sup>21</sup>~~11~~, wherein the substrate comprises germanium.

23.

~~57.~~

(New) The conductive system of claim <sup>21</sup>~~11~~, wherein the substrate comprises gallium arsenide.

*C1  
Concluded*